

CLAIMS

What is claimed is:

1. An apparatus for generating configuration instructions used to build a programmable machine, comprising:

a library having:

a plurality of objects representing aspects of a configuration process; and

a plurality of parameters associated with respective objects, wherein at least one of the parameters includes an unspecified value; and

build management logic configured to specify a set of objects from the library to implement the configuration of the programmable machine, and to generate the configuration instructions from the set of objects,

wherein the build management logic is further configured to generate the configuration instructions by determining the value of the unspecified value.

2. The apparatus according to claim 1, wherein the set of objects from the library have a hierarchical order, and wherein the at least one parameter that includes the unspecified value is associated with an object located at a defined level within the hierarchal order.

3. The apparatus according to claim 2, wherein the build management logic is configured to determine the unspecified value by determining the value from an object that is higher in the hierarchical order than the defined level.

1 4. The apparatus according to claim 1, wherein the at least one parameter that
2 includes the unspecified value comprises an expression that identifies a location to
3 determine the value, and wherein the build management logic is configured to specify the
4 value by accessing the location specified in the expression.

5
6 5. A computer readable medium having data structures and machine readable
7 instructions for implementing the library and the build management logic of claim 1.

8
9 6. An apparatus for generating configuration instructions used to build a
10 programmable machine, comprising:

11 a library having generic objects representing aspects of a configuration process;
12 and

13 build management logic configured to generate the configuration instructions
14 used to build the programmable machine by organizing the generic objects in the library
15 based on a framework established by a template.

16
17 7. The apparatus according to claim 6, wherein the template is expressed in a
18 markup language and has a form defined by a schema.

19
20 8. The apparatus according to claim 6, wherein the build management logic is
21 configured to transfer the template to another user, or receive the template from the other
22 user.

1 9. The apparatus according to claim 6, wherein the build management logic is
2 configured to transfer the template to a head-end site, or receive the template from the
3 head-end site.

4
5 10. The apparatus according to claim 6, wherein the build management logic is
6 configured to encapsulate information obtained from the library and the template in a
7 package, and to transfer the package to another site.

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9 11. The apparatus according to claim 6, wherein the build management logic is
10 configured to generate a plurality of sets of configuration instructions to build a
11 respective plurality of programmable machines.

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13 12. An apparatus according to claim 11, wherein the build management logic is
14 configured to generate a synchronization file that specifies a manner in which the
15 configuration of each machine in the plurality of programmable machines impacts other
16 machines within the plurality of programmable machines.

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18 13. A computer readable medium having data structures and machine readable
19 instructions for implementing the library and build management logic of claim 6.

20
21 14. A system for generating configuration instructions used to build a
22 programmable machine, comprising:

23 a head-end site, including:

24 head-end logic configured to interact with a remote client site; and
25

1 a central database coupled to the head-end logic, the central
2 database containing at least one package that specifies configuration
3 instructions, said at least one package including:

4 a plurality of objects representing aspects of a
5 configuration process;

6 a plurality of parameters associated with respective
7 objects; and

8 at least one template for organizing the plurality of
9 objects in accordance with a predetermined framework; and

10 a configuration site, including:

11 a local database for storing configuration instructions used to
12 configure at least one machine associated with the configuration site; and

13 logic configured to receive and store said at least one package in
14 the local database; and

15 logic configured to generate configuration instructions used to
16 configure at least one programmable machine based on said at least one
17 package.

18
19 15. A computer readable medium having stored thereon a data structure,
20 comprising:

21 a library having generic objects representing aspects of a configuration process;

22 and

23 a template defining specific information used to build a programmable machine,
24 wherein the specific information provided by the template includes a reference to at least
25 one generic object in the library.

1
2 16. An apparatus for generating configuration instructions used to build a
3 programmable machine, comprising:

4 a library having:

5 a plurality of generic objects representing aspects of a
6 configuration process; and

7 a plurality of parameters associated with respective generic
8 objects;

9 build management logic configured to specify a set of objects from the library to
10 implement the configuration of the programmable machine, and configured to generate
11 the configuration instructions from the set of objects; and

12 a user interface configured to allow a user to interact with the build management
13 logic.

14
15 17. The apparatus according to claim 16, wherein the user interface further
16 includes a tree display section configured to display objects organized as a hierarchical
17 tree.

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19 18. The apparatus according to claim 17, wherein the user interface further
20 includes a parameter display section configured to display information pertaining to
21 parameters that are associated with at least one of the objects in the tree display section.

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23 19. The apparatus according to claim 18, wherein the user interface further
24 includes a properties display section configured to display properties of at least one of the
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1 objects in the tree display section or at least one parameter in the parameter display
2 section.

3
4 20. The apparatus according to claim 16, wherein the build management logic
5 includes logic configured to display ownership information associated with at least one
6 object, wherein the ownership information determines a user's ability to perform actions
7 on the at least one object.

8
9 21. The apparatus according to claim 16, wherein the build management logic
10 includes logic configured to display version information associated with information
11 stored in the library.

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13 22. The apparatus according claim 16, wherein the build management logic
14 further includes logic configured to restrict a user's right to manipulate information
15 stored in the library based on the user's membership in one of a plurality of groups.

16
17 23. The apparatus according to claim 16, wherein the build management logic
18 includes logic configured to apply validation rules to the entry of parameter information
19 to determine whether the entered parameter information meets predetermined criteria.

20
21 24. A method for generating configuration instructions used to build a
22 programmable machine, comprising:
23 providing a library having:
24 a plurality of objects representing aspects of a configuration
25 process; and

1 a plurality of parameters associated with respective objects,
2 wherein at least one of the parameters includes an unspecified value; and
3 specifying a set of objects from the library to implement the configuration of the
4 programmable machine; and
5 generating the configuration instructions from the set of objects, including
6 determining the value of the unspecified value
7

8 25. The method according to claim 24, wherein the set of objects from the library
9 have a hierarchical order, and wherein the at least one parameter that includes the
10 unspecified value is associated with an object located at a defined level within the
11 hierarchal order.
12

13 26. The method according to claim 25, wherein the determining of the value
14 comprises determining the value from an object that is higher in the hierarchical order
15 than the defined level.
16

17 27. The method according to claim 24, wherein the at least one parameter that
18 includes the unspecified value comprises an expression that identifies a location to
19 determine the value, and wherein the determining of the value comprises accessing the
20 location specified in the expression.
21

22 28. A computer readable medium having data structures and machine readable
23 instructions for implementing the method of claim 24.
24
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1 29. A method for generating configuration instructions used to build a
2 programmable machine, comprising:

3 providing a library having generic objects representing aspects of a configuration
4 process; and

5 generating configuration instructions used to build the programmable machine by
6 organizing the generic objects in the library based on a framework established by a
7 template.

8
9 30. The method according to claim 29, wherein the template is expressed in a
10 markup language and has a form defined by a schema.

11
12 31. The method according to claim 29, further comprising transferring the
13 template to another user, or receiving the template from the other user.

14
15 32. The method according to claim 29, further comprising transferring the
16 template to a head-end site, or receiving the template from the head-end site.

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18 33. The method according to claim 29, further comprising:
19 encapsulating information obtained from the library and the template in a
20 package; and
21 transferring the package to another site.

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23 34. The method according to claim 29, further comprising generating a plurality
24 of sets of configuration instructions to build a respective plurality of programmable
25 machines.

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2 35. The method according to claim 34, further comprising generating a
3 synchronization file that specifies a manner in which the configuration of each machine
4 in the plurality of programmable machines impacts other machines within the plurality of
5 programmable machines.

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7 36. A computer readable medium having data structures and machine readable
8 instructions for implementing the method of claim 29.

9
10 37. A method for processing requests for configuration instructions, comprising:
11 receiving a request from at least one configuration site for a configuration
12 package, the configuration package including the configuration instructions;
13 accessing a central database to retrieve the requested configuration package; and
14 transmitting the requested configuration package to the configuration site for its
15 use in configuring at least one machine at the configuration site,
16 wherein the configuration package include:
17 a plurality of objects representing aspects of a configuration
18 process;
19 a plurality of parameters associated with respective objects; and
20 at least one template for organizing the plurality of objects in
21 accordance with a predetermined framework.

22
23 38. An apparatus for generating configuration instructions used to build a
24 programmable machine, comprising:
25 a database having:

1 a plurality of configuration items representing aspects of a
2 configuration process; and
3 a plurality of features associated with respective
4 configuration items, wherein at least one of the configuration items
5 includes at least one of the following features:
6 parameter information pertaining to at least
7 one parameter associated with the configuration
8 item;
9 ownership information identifying an
10 individual assigned ownership of the configuration
11 item; and
12 validation information identifying at least
13 one validation rule applicable to the configuration
14 item; and
15 build management logic configured to specify a set of configuration items from
16 the database to implement the configuration of the programmable machine, and
17 configured to generate the configuration instructions from the set of items.

18
19 39. A computer readable medium having stored thereon a data structure,
20 comprising:

21 a plurality of configuration items representing aspects of a configuration process;
22 and
23 a plurality of features associated with respective configuration items, wherein at
24 least one of the configuration items includes at least one of the following features:
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1 parameter information pertaining to at least one parameter associated with
2 the configuration item;

3 ownership information identifying an individual assigned ownership of the
4 configuration item; and

5 validation information identifying at least one validation rule applicable to
6 the configuration item.

7
8 40. A computer readable medium having stored thereon information arranged
9 according to schema data structure, comprising:

10 a machine element pertaining to a machine to be configured;

11 a stage element pertaining to a stage involved in configuring the machine;

12 a phase list element pertaining to a list of phases used to implement the stage;

13 a parameter element pertaining to a parameter associated with the configuration of
14 the machine; and

15 a value element pertaining to a value assigned to the parameter.

16
17 41. The computer readable medium according to claim 40, further including:

18 a group element referring to group in which the machine is a member.

19
20 42. The computer readable medium according to claim 40, wherein the schema is
21 a markup language schema.